

CLAIMS

1. A statistical parsing method comprising:  
applying a statistical natural language understanding (NLU) model to text input  
for identifying substrings within said text input, said statistical NLU model being selected  
for identifying a particular class of substring; and,  
examining said each identified substring using an inventory of queries  
corresponding to said selected statistical NLU model.

2. The method of claim 1, further comprising iteratively applying different selected  
reusable statistical NLU models to said text input.

3. The method of claim 1, wherein said step of applying a statistical NLU model  
further includes comparing a probability value, which corresponds to said identified  
substrings, to a threshold probability value, which corresponds to said selected  
statistical NLU model.

4. The method of claim 1, wherein said selected reusable statistical NLU model  
comprises a maximum entropy direct channel model, a source-channel model trained  
by the expectation maximization algorithm, a n-gram model, a statistical parser, or a  
word spotter.

1 5. The method of claim 1, wherein said step of applying a statistical NLU model  
2 further comprises identifying a parse tree which corresponds to each said identified  
3 substring.

1 6. The method of claim 1, said inventory of queries having a hierarchy determined  
2 during training of an NLU system.

1 7. A maximum entropy parsing method comprising:  
2 applying a statistical natural language understanding (NLU) model to text input  
3 for identifying substrings within said text input, said statistical NLU model being selected  
4 for identifying a particular class of substring; and,  
5 examining each said possible substring using one or more features  
6 corresponding to said selected statistical NLU model.

1 8. The method of claim 7, further comprising iteratively applying different selected  
2 statistical NLU models to said text input.

1 9. The method of claim 7, wherein said step of applying a statistical NLU model  
2 further includes comparing a probability value, which corresponds to said identified  
3 substrings, to a threshold probability value, which corresponds to said selected  
4 statistical NLU model.

1 10. The method of claim 7, wherein said selected statistical NLU model comprises a  
2 maximum entropy direct channel model, a source-channel model trained by the  
3 expectation maximization algorithm, an n-gram model, a statistical parser, or a word  
4 spotter.

1 11. The method of claim 7, wherein said step of applying a statistical NLU model  
2 further comprises identifying a parse tree which corresponds to each said identified  
3 substring.

1 12. The method of claim 7, said features having weights determined during training  
2 of an NLU system.

1 13. A statistical parsing system comprising:  
2 a text buffer for storing text input;  
3 at least one statistical NLU model for recognizing a substring within said text  
4 input; and,  
5 an inventory of queries wherein each query within said inventory of queries  
6 corresponds to one of said at least one reusable statistical NLU models.

1 14. The system of claim 13, wherein said statistical NLU model includes a threshold  
2 probability value for comparing each said recognized substring to said threshold  
3 probability value.

1 15. The system of claim 13, wherein said statistical NLU model comprises a  
2 maximum entropy direct channel model, a source-channel model trained by the  
3 expectation maximization algorithm, an n-gram model, a statistical parser, or a word  
4 spotter.

1 16. The system of claim 13, wherein said statistical NLU model can identify a parse  
2 tree corresponding to each said recognized substring within said text input.

1 17. The system of claim 13, said inventory of queries having a hierarchy determined  
2 during training of an NLU system.

1 18. A statistical parsing system comprising:  
2 a text buffer for storing text input;  
3 at least one reusable statistical NLU model for recognizing a substring within said  
4 text input; and,  
5 one or more features wherein each feature corresponds to one of said at least  
6 one reusable statistical NLU models.

1 19. The system of claim 18, wherein said statistical NLU model includes a threshold  
2 probability value for comparing each said recognized substring to said threshold  
3 probability value.

1 20. The system of claim 18, wherein said statistical NLU model comprises a  
2 maximum entropy direct channel model, a source-channel model trained by the  
3 expectation maximization algorithm, an n-gram model, a statistical parser, or a word  
4 spotter.

1 21. The system of claim 18, wherein said statistical NLU model can identify a parse  
2 tree corresponding to each said recognized substring within said text input.

1 22. The system of claim 18, each said feature having a weight determined during  
2 training of an NLU system.

1 23. A machine readable storage, having stored thereon a computer program having  
2 a plurality of code sections executable by a machine for causing the machine to  
3 perform the steps of:

4 applying a statistical natural language understanding (NLU) model to text input  
5 for identifying substrings within said text input, said statistical NLU model being selected  
6 for identifying a particular class of substring; and,

7 examining said each identified substring using an inventory of queries  
8 corresponding to said selected statistical NLU model.

1 24. The machine readable storage of claim 23, for causing the machine to perform  
2 the additional step of iteratively applying different selected statistical NLU models to  
3 said text input.

1 25. A machine readable storage, having stored thereon a computer program having  
2 a plurality of code sections executable by a machine for causing the machine to  
3 perform the steps of:

4 applying a statistical natural language understanding (NLU) model to text input  
5 for identifying substrings within said text input, said statistical NLU model being selected  
6 for identifying a particular class of substring; and,

7 examining each said possible substring using one or more features  
8 corresponding to said selected statistical NLU model.

1 26. The machine readable storage of claim 25, for causing the machine to perform  
2 the additional step of iteratively applying different selected reusable statistical NLU  
3 models to said text input.

1 27. In a natural language understanding (NLU) system, a direct channel method for  
2 determining a meaning for a text input comprising:

3 applying a statistical NLU model to a text input;  
4 identifying one or more substrings within said text input, each said substring  
5 corresponding to said reusable statistical NLU model; and,

6 determining a meaning for said text input based upon said identified substrings  
7 from possible meanings within said statistical NLU model.

1 28. The method of claim 27, further comprising:  
2 comparing a probability value corresponding to each said substring to one or  
3 more threshold probability values within said statistical NLU model.

1 29. The method of claim 27, further comprising iteratively applying different selected  
2 statistical NLU models to said text input.

1 30. The method of claim 27, wherein said NLU model comprises a maximum entropy  
2 direct channel model, a source-channel model trained by the expectation maximization  
3 algorithm, a n-gram model, a statistical parser, or a word spotter.

1 31. The method of claim 27 wherein said determining step comprises applying  
2 weighted features corresponding to said identified substrings to said text input.

1 32. A machine readable storage, having stored thereon a computer program having  
2 a plurality of code sections executable by a machine for causing the machine to  
3 perform the steps of:  
4 applying a statistical NLU model to a text input;

5 identifying one or more substrings within said text input, each said substring  
6 corresponding to said reusable statistical NLU model; and,  
7 determining a meaning for said text input based upon said identified substrings  
8 from possible meanings within said reusable statistical NLU model.

1 33. The machine readable storage of claim 32, for causing the machine to perform  
2 the additional step of:

3 comparing a probability value corresponding to each said substring to one or  
4 more threshold probability values within said statistical NLU model.

1 34. The machine readable storage of claim 32, for causing the machine to perform  
2 the additional step of:

3 iteratively applying different selected reusable statistical NLU models to said text  
4 input.

1 35. The machine readable storage of claim 32, wherein said determining step  
2 comprises applying weighted features corresponding to said identified substrings to  
3 said text input.